Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

The invention is claimed as follows:

1. (Withdrawn) A microchip comprising: at least one main separation channel formed in a channel forming medium, said main separation channel containing microfluids when in operation; at least one detecting channel containing a first conductive element comprising a wire, fiber or a carbon paste for performing electrochemical detection, said detecting channel being formed in said channel forming medium and adjoining said main separation channel, wherein said main separation channel and said detecting channel intersect; and at least one reservoir containing a second conductive element comprising a wire, fiber or paste for serving as a reference to said first conductive element, said reservoir being formed in said channel forming medium and collecting waste when in operation.

2. (Canceled).

3. (Withdrawn) The microchip of claim 1, wherein said detecting channel intersects said main separation channel at a point defined as an angle of approximately a 90°.

4. (Withdrawn) The microchip of claim 1, wherein said detecting channel intersects said main separation channel at a point defined as an angle of less than a 90°.

5. (Withdrawn) The microchip of claim 1, wherein said detecting channel intersects said main separation channel at a point defined as an angle of greater than a 90°.

6. (Withdrawn) The microchip of claim 1, wherein said detecting channel intersects said main separation channel at any an end point of said main channel.

7. (Withdrawn) The microchip of claim 1, wherein said channel forming medium comprises a polymeric material comprising poly(dimethylsiloxane).

8. (Withdrawn) The microchip of claim 1, wherein said channel forming medium comprises a polymeric material comprising poly(methylmethacrylate).

9. (Withdrawn) The microchip of claim 1, wherein at least one of aid conductive element and second conductive element comprises a gold wire.

10. (Withdrawn) The microchip of claim 1, wherein at least one of aid conductive element and second conductive element comprises a platinum wire.

11. (Withdrawn) The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a palladium wire.

12. (Withdrawn) The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a copper wire.

13. (Withdrawn) The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a nickle wire.

14. (Withdrawn) The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a nickle-alloy wire.

15. (Withdrawn) The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a carbon fiber.

16. (Withdrawn) The microchip of claim 1, wherein said first conductive element and said second conductive element comprises a carbon paste.

17. (Withdrawn) The microchip of claim 1, wherein at least one detecting channel comprises a plurality of detecting channels.

18. (Withdrawn) A method of forming a microchip comprising: forming a main separation channel in a channel forming medium; forming a detecting channel in a channel forming medium, wherein said detecting channel adjoins said main channel; placing a first conductive element comprising a wire, fiber or carbon paste in said detecting channel; and placing a second

conductive element comprising a wire, fiber or carbon paste in said reservoir or said detecting channel to provide thereby form said microchip.

19. (Withdrawn) The method of claim 18, further comprising joining said channel forming medium with at least one sealing medium.

20. (Withdrawn) The method of claim 18, wherein said main separation channel, said detecting channel, and said reservoir are formed in said channel forming medium by molding.

21. (Withdrawn) The method of claim 18, wherein said detecting channel intersects said main channel.

22. (Withdrawn) The method of claim 18, wherein said detecting channel intersects said main separation channel at approximately a 90° angle.

23. (Withdrawn) The method of claim 18, wherein said detecting channel intersects said main separation channel at less than a 90° angle.

24. (Withdrawn) The method of claim 18, wherein said detecting channel intersects said main separation channel at greater than a 90° angle.

25. (Withdrawn) The method of claim 18, wherein said detecting channel intersects said main separation channel at an end point of said channel.

26. (Withdrawn) The method of claim 18, wherein said channel forming medium comprises a polymeric material.

27. (Withdrawn) The method of claim 26 wherein said polymeric material comprises poly (methylmethacrylate) or poly (dimethylsiloxane).

28. (Withdrawn) The method of claim 18, wherein at least one first conductive element and second conductive element comprises a gold, platinum, palladium, copper, nickle, or nickle alloy wire, carbon fiber or carbon paste.

29. (Withdrawn) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a platinum wire.

30. (Withdrawn) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a palladium wire.

31. (Withdrawn) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a copper wire.

32. (Withdrawn) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a nickle wire.

33. (Withdrawn) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a nickle-alloy wire

34. (Withdrawn) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a carbon fiber.

35. (Withdrawn) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises carbon paste.

36. (Withdrawn) The method of claim 18, wherein said at least one detecting channel comprises a plurality of detecting channels.

37. (Previously Presented) A method of performing electrophoresis comprising:

attaching a first conductive element and a second conductive element to a microchip having at least one microfluid thereon, wherein said microchip comprises:

at least one main separation channel formed in a channel forming medium, said main channel containing at least one microfluid;

at least one detecting channel containing a first conductive wire, fiber or paste for performing electrochemical detection, said detecting channel being formed in said channel forming medium and adjoining said main channel;

and at least one reservoir containing said second conductive element to provide a reference to said first conductive element, said reservoir being formed in said channel forming medium and containing waste; and

applying continuous or pulsed amperometric detection to said microchip using said conductive elements,

wherein specimens within said microfluid migrate toward said first conductive wire and, wherein electrical contact with said first conductive wire, fiber or paste generate a measurable signal.

38. (Previously Presented) The method of claim 37, wherein said detecting channel intersects said main channel.

39. (Previously Presented) The method of claim 37, wherein said detecting channel intersects said main channel at an end point, at an angle of approximately 90°.

40. (Previously Presented) The method of claim 37, wherein said detecting channel intersects said main channel at an angle of less than 90°.

41. (Previously Presented) The method of claim 37, wherein said detecting channel intersects said main channel at an angle of greater than 90°.

42. (Previously Presented) The method of claim 37, wherein said detecting channel intersects said main channel at an end point of said main channel.

43. (Previously Presented) The method of claim 37, wherein said channel forming medium comprises a polymeric material.

44. (Previously Presented) The method of claim 45, wherein said channel forming medium comprises poly (methylmethacrylate) or poly (dimethylsiloxane).

45. (Previously Presented) The method of claim 37, wherein at least one first conductive element and second conductive element comprise gold, platinum, palladium, copper, nickle, nickle alloy, carbon fiber or carbon paste.

46. (Previously Presented) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises a platinum wire.

47. (Previously Presented) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises a palladium wire.

48. (Previously Presented) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises a copper wire.

49. (Previously Presented) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises a nickle wire.

50. (Previously Presented) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises a nickle-alloy wire.

51. (Previously Presented) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises carbon fiber.

52. (Previously Presented) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises carbon paste.

53. (Previously Presented) The method of claim 37, wherein said at least one detecting channel comprises a plurality of detecting channels.

54. (Previously Presented) The method of claim 37, wherein said specimens comprises a carbohydrate, an amino acid, a protein, an antibiotic, levoglucosan. creatinine, creatine, uric acid, an amine, a thiol, an alcohol, or a mixture thereof.

55. (Previously Presented) The method of claim 37, wherein said specimens comprise an amino acid.

56. (Previously Presented) The method of claim 37, wherein said specimens comprise a protein.

57. (Previously Presented) The method of claim 37, wherein said specimens comprise an antibiotic.

58. (Previously Presented) The method of claim 37, wherein said specimens comprise levoglucosan.

59. (Previously Presented) The method of claim 37, wherein said specimens comprise creatinine.

60. (Previously Presented) The method of claim 37, wherein said specimens comprise creatine.

61. (Previously Presented) The method of claim 37, wherein said specimens comprise uric acid.

62. (Previously Presented) The method of claim 37, wherein said specimens comprise an amine.

63. (Previously Presented) The method of claim 37, wherein said specimens comprise a thiol.

64. (Previously Presented) The method of claim 37, wherein said specimens comprise an alcohol.

65. (Previously Presented) The method of claim 37, wherein said continuous or pulsed amperometic detection provides an electrical potential across said microchip to provide separation and detection of at least one specimen in said microfluid.

66. (Previously Presented) The method of claim 65, wherein said electrical potential applied for separating the specimens contained in said microfluid comprises approximately +100V to approximately +5000V.

67. (Previously Presented) The method of claim 65, wherein said electrical potential applied for separating the specimens contained in said microfluid comprises +800V to approximately +2000V.

68. (Previously Presented) The method of claim 65, wherein said electrical potential applied for separating the specimens contained in said microfluid comprises approximately +1000V.

69. (Previously Presented) The method of claim 65, wherein said electrical potential applied for separating the specimens contained in said microfluid comprises approximately +1700V.

70. (Previously Presented) The method of claim 65, wherein said electrical potential applied for separating the specimens contained in said microfluid comprises approximately +0.4V to approximately +1.0V.

71. (Previously Presented) The method of claim 65, wherein said electrical potential applied for separating the specimens contained in said microfluid comprises approximately +0.5V.

72. (Previously Presented) The method of claim 65, wherein said electrical potential applied for separating the specimens contained in said microfluid comprises approximately +0.7V.

73. (Previously Presented) The method of claim 37, further comprising injecting said microfluid into a channel of said microchip at an electrical potential of approximately +100V, or approximately +500V.

74. (Original) The method of claim 73, wherein the injecting step is performed for between approximately 1 second and approximately 1 minute.

75. (Original) The method of claim 73, wherein the injecting step is performed for between approximately 7 seconds.

76. (Previously Presented) The method of claim 37, further comprising injecting said microfluid into a channel of said microchip at an electrical potential of approximately +160V.

77. (Previously Presented) The method of claim 37, further comprising injecting said microfluid into a channel of said microchip at an electrical potential of approximately +410V.

78. (Previously Presented) The method of claim 37, further providing, in combination with said at least one microfluid, an electrolyte solution.

79. (Original) The method of claim 78, wherein said electrolyte solution comprises borate.

80. (Previously Presented) The method of claim 78, wherein said electrolyte solution comprises a pH of approximately 7.1 to approximately 13 or a pH of approximately 9.45, or a pH of approximately 11, or a pH of approximately 12.

81. (Canceled)

82. (Canceled)

83. (Canceled)

84. (Canceled)

85. (Original) The method of claim 54 wherein the specimen comprises glycated hemoglobin.

86. (Original) The method of claim 54 wherein the specimen comprises hemocysteine.

87. (Original) The method of claim 54 wherein the specimen comprises uric acid.